



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,710	11/30/2000	Takashi Hasegawa	P/1071-1233	1866

7590 03/24/2004

Keating & Bennett, LLP
10400 Eaton Place, Suite 312
Fairfax, VA 22030

EXAMINER

JONES, STEPHEN E

ART UNIT	PAPER NUMBER
----------	--------------

2817

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/726,710

Applicant(s)

HASEGAWA, TAKASHI

Examiner

Stephen E. Jones

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/4/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/22/03 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernard et al. in view of Okada et al. (EP 0903801A2 of record).

Bernard (Figs. 1-5) teaches a nonreciprocal device including: a plurality of conductors overlapping on a magnetic member (4) (e.g. see Col. 3, lines 34-38 and 58-68); a magnet (24) produces a magnetic field perpendicular to the magnetic material (4); a coil inductor (e.g. 19) is connected between the conductor and the input/output; the longitudinal axis of the inductor is parallel to the magnetic material; inherently the magnetic flux of the inductor is perpendicular to the direction of the magnetic field since the DC magnetic field is through the thickness of the device and the magnetic flux of the

inductor is along its axis as is defined by fundamental inductor coil characteristics (i.e. of a toroidal coil); and as shown in figure 1 the inductor axis can be considered “substantially” equal to a position of a center height of the magnetic member, especially since substantially is a broad term, and because “center height” can be broadly read as the total height of the center of the member or as the height at the center of the member; a capacitor (e.g. 17, 18) is connected in series with the inductor forming a bandpass filter (see Col. 15-19) (Claim 2); inherently the device is for use in a communication device since it is a radio frequency device (e.g. see Col. 1, lines 5-13) (Claim 4); and the inductor is adjacent to the plane of magnetic member (Claim 5).

However, Bernard does not teach that the circular magnetic member can be rectangular.

Okada teaches that square and circular ferrites are alternatives (e.g. col. 7, lines 43-45).

Accordingly, it would have been considered obvious to one of ordinary skill in the art to have substituted the art-recognized equivalent rectangular-shaped ferrite of Okada in place of the disk-shaped ferrite in the Bernard device, because such a modification would have been considered a mere substitution of art-recognized equivalent ferrite shapes.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bernard et al. and Okada et al. (EP 0903801A2 of record) as applied to claim 1 above, and further in view of Maeda et al. (US 3,836,874 of record).

The combination of Bernard and Okada teaches a nonreciprocal device as described above. However, the combination does not explicitly teach that the bandpass filter can be alternatively a low pass filter.

Maeda teaches a nonreciprocal device having coils forming a bandpass filter (Fig. 6) or alternatively a low pass filter (Fig. 9).

It would have been considered obvious to one of ordinary skill in the art to have modified the bandpass filter circuit of the combination of Bernard and Okada to instead have been a low pass filter such as taught by Maeda, because it would have been a mere substitution of art-recognized alternative/equivalent filter circuits selected based on desired circuit characteristics.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (US 3,836,874 of record) in view of Okada et al. (EP 0903801A2 of record) and Konishi et al. (EP 0903802A2 of record).

The Maeda et al. reference discloses in figure 5 a non-reciprocal circuit device with overlapping, intersecting central conductors 21-26 on a magnetic member 31 with a DC magnetic field applied perpendicularly thereto (see claim I of Maeda et al.). Figure 9 shows a non-reciprocal circuit that includes a filter of a series inductor 66 connected between the input/output and the respective conductor. The reference further discloses that the inductors may be formed by a coiled wire (i.e. a solenoid) but does not disclose the coiled wire's orientation (that the longitudinal axis is parallel to the major surface of the magnetic member such that the magnetic flux of the inductor is perpendicular to the

Art Unit: 2817

DC magnetic field and that the ends of the inductor are parallel to the longitudinal axis of the inductor) or that the magnetic member is rectangular.

Konishi discloses a non-reciprocal circuit element with solenoid shaped inductors 181-183 in figure 1 that are oriented such that the magnetic field passing through the magnetic members (10, 11) is perpendicular to the DC magnetic field (page 3, lines 40-45), and the ends of the inductor are parallel with the longitudinal axis of the inductor.

Okada teaches that square and circular ferrites are alternatives (e.g. col. 7, lines 43-45).

It would have been considered obvious to one of ordinary skill in the art to have oriented the solenoid inductors such as taught by Konishi in the nonreciprocal circuit of Maeda, especially since Maeda is silent on the orientation of the solenoid, thus any art-recognized equivalent orientation would have been usable therewith such as the orientation taught by Konishi.

Furthermore, it would have been considered obvious to one of ordinary skill in the art to have substituted the art-recognized equivalent rectangular-shaped ferrite of Okada in place of the disk-shaped ferrite in the Bernard device, because such a modification would have been considered a mere substitution of art-recognized equivalent ferrite shapes.

Response to Arguments

With respect to Claims 1-5, Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection (i.e. the Bernard et al. reference).

With respect to claim 6, Applicant argues that none of Ohira, Okada, and Maeda teaches that the ends of the inductor are parallel with the longitudinal axis of the inductor. While the examiner agrees with this assertion, the Konishi reference of record does teach this limitation as detailed in the new rejection of Claim 6 above.

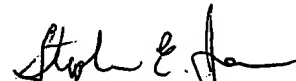
Allowable Subject Matter

6. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Stephen Jones
Patent Examiner
Art Unit 2817

SEJ